

PROJECT DESCRIPTION

1. GENERAL
THIS PORTION OF THE PROJECT INVOLVES THE FULL RECONSTRUCTION OF THE EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF US 40 (BALTIMORE NATIONAL PIKE) & JOHNNYCAKE RD/ACADEMY RD. THIS PROJECT IS LOCATED IN BALTIMORE COUNTY, MARYLAND. VIDEO DETECTION IS PROPOSED FOR MAINLINE LEFT TURN. SAMPLING DETECTION FOR WB & EB US 40, AND SIDE STREET PRESENCE DETECTION.
US 40 (BALTIMORE NATIONAL PIKE) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

II. INTERSECTION OPERATION

1. THE INTERSECTION WILL CONTINUE TO OPERATE IN A NEMA SIX PHASE, FULL-TRAFFIC-ACTUATED MODE WITH THE MAINLINE (US 40) APPROACHES RUNNING CURRENTLY. EXCLUSIVE LEFT TURNS WILL BE PROVIDED FOR US 40 APPROACHES. THE SIDE STREET (JOHNNYCAKE RD/ACADEMY RD) APPROACHES WILL OPERATE IN A SPLIT PHASE. PEDESTRIAN PHASING IS PROVIDED ACROSS THE NORTH, SOUTH, AND WEST LEGS OF THE INTERSECTION.
2. THE INTERSECTION WILL OPERATE AS PART OF AN INTERCONNECT SYSTEM BETWEEN INGLESIDE AVE AND COLERIDE RD USING 12 PAIR COMMUNICATION CABLE. THE SYSTEM CABINET IS LOCATED AT JOHNNYCAKE RD.
3. INSTALL A FULLY-TRAFFIC-ACTUATED EIGHT PHASE TRAFFIC SIGNAL CONTROLLER WITH A VIDEO DETECTION INTERFACE, 2-WIRE CENTRAL CONTROL UNIT ISOLATION BOARD, TELEMETRY EQUIPMENT, FOUR CHANNEL LOOP DETECTOR AMPLIFIER, TRAFFIC RESPONSIVE MASTER CONTROLLER, AND ASSOCIATED HARNESS HOUSED IN A NEMA SIZE 6 BASE MOUNTED CABINET.

III. SPECIAL NOTES

UPON COMPLETION OF THIS PROJECT THE CONTRACTOR SHALL NOTIFY MR. ROBERT SNYDER OF SHA AT 410-787-7635 TO ARRANGE FOR THE PHONE LINE INSTALLATION. THE CONTRACTOR IS TO PROVIDE MR. SNYDER WITH THE NEAREST STREET ADDRESS, ZIP CODE, AND TELEPHONE NUMBER.

TYPICAL MESSAGES FOR ACCESSIBLE PED SIGNALS:

US 40 (BALTIMORE NATIONAL PIKE) AND JOHNNYCAKE RD/ACADEMY RD

- 1) US 40 (BALTIMORE NATIONAL PIKE) AND JOHNNYCAKE RD/ACADEMY RD - WEST LEG
STREET AT 90 DEGREES
WAIT: "WAIT TO CROSS BALTIMORE NATIONAL PIKE AT JOHNNYCAKE AND ACADEMY. SECOND PUSHBUTTON IN MEDIAN, WAIT"*
WALK: RAPID TICK
- 2) US 40 (BALTIMORE NATIONAL PIKE) AND JOHNNYCAKE RD/ACADEMY RD - WEST LEG
STREET AT 90 DEGREES
WAIT: "WAIT TO CROSS BALTIMORE NATIONAL PIKE AT JOHNNYCAKE AND ACADEMY WAIT"*
WALK: RAPID TICK
- 3) JOHNNYCAKE RD AND US 40 (BALTIMORE NATIONAL PIKE) - NORTH LEG
STREET AT 90 DEGREES
WAIT: "WAIT TO CROSS JOHNNYCAKE AT BALTIMORE NATIONAL PIKE, WAIT"*
WALK: RAPID TICK
- 4) ACADEMY RD AND US 40 (BALTIMORE NATIONAL PIKE) & - SOUTH LEG
STREET AT 90 DEGREES
WAIT: "WAIT TO CROSS ACADEMY AT BALTIMORE NATIONAL PIKE, WAIT"*
WALK: RAPID TICK

* MESSAGE USED IF DISTANCE FROM THE NEAREST PUSHBUTTON FOR PERPENDICULAR CROSSING IS < 10 FT
** MESSAGE USED IF CROSSING WALK DIVERGES FROM OR CONVERGES WITH PARALLEL TRAFFIC
NOTE: MESSAGES FOR INTERSECTION CONFIGURATIONS, VARYING FROM THE ABOVE ARE TO BE APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.

PROJECT CONTACTS

THE FOLLOWING CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

MS. ERIN KUHN
ASSISTANT DISTRICT ENGINEER, TRAFFIC
410-229-2381

MR. DONALD SCHAFER
ASSISTANT DISTRICT ENGINEER, CONSTRUCTION
410-229-2421

MR. ANDRE FUTRELL
ASSISTANT DISTRICT ENGINEER, MAINTENANCE
410-229-2361

MR. ROBERT SNYDER
ASSISTANT CHIEF, TRAFFIC OPERATIONS DIVISION
410-787-7631

MR. MICHAEL PASQUARIELLO
DISTRICT UTILITY ENGINEER
410-229-2341

MR. RICHARD DAFF SR.
CHIEF, TRAFFIC OPERATIONS DIVISION
410-787-7630

MR. EDWARD RODENHIZER
SUPERVISOR, SIGNAL OPERATIONS
410-787-7652

THE POWER COMPANY REPRESENTATIVE IS:

BALTIMORE GAS & ELECTRIC
1068 N. FRONT STREET, ROOM 501, PO BOX 1475
BALTIMORE, MD 21203-1475
410-637-8713

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY THE ADMINISTRATION

CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
971017	EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET- BASE MOUNT	EA	1
963010	FOUR CHANNEL LOOP DETECTOR AMPLIFIER, RACK MOUNT	EA	2
900000	VIDEO INTERFACE EQUIPMENT	EA	1
973023	SHEET ALUMINUM SIGN MAST ARM/POLE MOUNTED: - 4 EACH M1-5(6) (24" x 48") "WEST, US 40, RIGHT ARROW" M1-5(6) (24" x 48") "EAST, US 40, RIGHT ARROW" M1-5(6) (36" x 72") "WEST, US 40, LEFT ARROW" M1-5(6) (36" x 72") "EAST, US 40, LEFT ARROW" - 4 EACH D-3(1) (60" x 16") "STREET NAME SIGN" - 4 EACH R10-3(1) (9" x 15") "PUSH BUTTON TO CROSS BALTIMORE NATIONAL PIKE" - 2 EACH R10-3(1) (9" x 15") "PUSH BUTTON TO CROSS ACADEMY RD" - 2 EACH R10-3(1) (9" x 15") "PUSH BUTTON TO CROSS JOHNNY CAKE RD"	SF	86.2

973023	SHEET ALUMINUM SIGN GROUND MOUNTED: - 11 EACH S1-1 (36" x 36"), W16- 7P L(30" x 18") - 6 EACH S1-1 (36" x 36"), W16- 7P R(30" x 18") - 1 EACH W4-1R (36" x 36") - 1 EACH R2-1 (36" x 36") - 1 EACH R5-1 (30" x 30")	SF	241
--------	--	----	-----

971020	TRAFFIC RESPONSIVE MASTER CONTROLLER AND CABINET - BASE MOUNTED	EA	1
--------	---	----	---

B. EQUIPMENT TO BE FURNISHED BY THE CONTRACTOR

CATEGORY CODE NO.	DESCRIPTION	UNITS	QUANTITY
120500	MAINTENANCE OF TRAFFIC	LS	1
203030	TEST PIT EXCAVATION	CY	8
585621	12 IN WHITE PREFORM THERMO PAVEMENT MARKINGS (CROSSWALK)	LF	1589
585625	24 IN WHITE PREFORM THERMO PAVEMENT MARKINGS (STOP LINE)	LF	192
800000	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS	EA	8
800000	REMOVE AND DISPOSE OF EXISTING MATERIALS AND EQUIPMENT	LS	1
800000	LED 16" COUNTDOWN PEDSTRIAN SIGNAL HEADS	EA	6
800000	FURNISH AND INSTALL 2 WIRE CENTRAL CONTROL UNIT	EA	1
801004	CONCRETE FOR SIGNAL FOUNDATION	CY	23
801106	WOOD SIGN SUPPORTS 4"x6"	LF	337
802501	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE	LF	555
805011	1 INCH ELECTRICAL CONDUIT GALVANIZED SLEEVE	LF	20
805118	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - BORED	LF	620
805125	2 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	160
805135	3 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	120
805140	4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED	LF	105
805160	1 INCH LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE	LF	10
807202	METERED SERVICE PEDESTAL	EA	1
810010	ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G.) THHN / THWN	LF	15
810555	MICROLOOP PROBE, 1000 FOOT LEAD IN CABLE	EA	4
811001	FURNISH AND INSTALL ELECTRICAL HANDHOLE	EA	8
811002	REMOVE ELECTRICAL HANDHOLE	EA	6
813014	INSTALL GROUND MOUNTED SIGN	SF	241
813015	INSTALL OVERHEAD SIGN	SF	86.2
816001	VIDEO DETECTION CAMERA	EA	6
816010	CONTROL CABLE, 500 FOOT, VIDEO DETECTION CAMERA TO CONTROLLER	EA	6
818004	10' BREAKAWAY PEDESTAL POLE	EA	8
818030	STEEL POLE WITH SINGLE 38 FOOT MAST ARM	EA	1
818041	STEEL POLE WITH SINGLE 60 FOOT MAST ARM	EA	1
818052	STEEL POLE WITH SINGLE 70 FOOT MAST ARM	EA	1
837001	GROUND ROD - 3/4" INCH DIAMETER X 10 FOOT LENGTH	EA	2
860284	12 INCH LED VEHICULAR SIGNAL HEAD SECTION	EA	46
860292	CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE	EA	7
861105	ELECTRICAL CABLE - 2 CONDUCTOR (NO. 14 A.W.G.)	LF	2261
861107	ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.)	LF	1804
861108	ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.)	LF	3592
862102	SAW CUT FOR SIGNAL (LOOP DETECTOR)	LF	200
871117	INSTALL EIGHT PHASE (FULLY ACTUATED) CONTROLLER AND CABINET - BASE MOUNT	EA	1

C. EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION.
7491 CONNELLEY DRIVE, HANOVER, MD 21076

ALL REMOVED SIGNAL MATERIALS ARE TO BECOME THE PROPERTY OF THE CONTRACTOR.

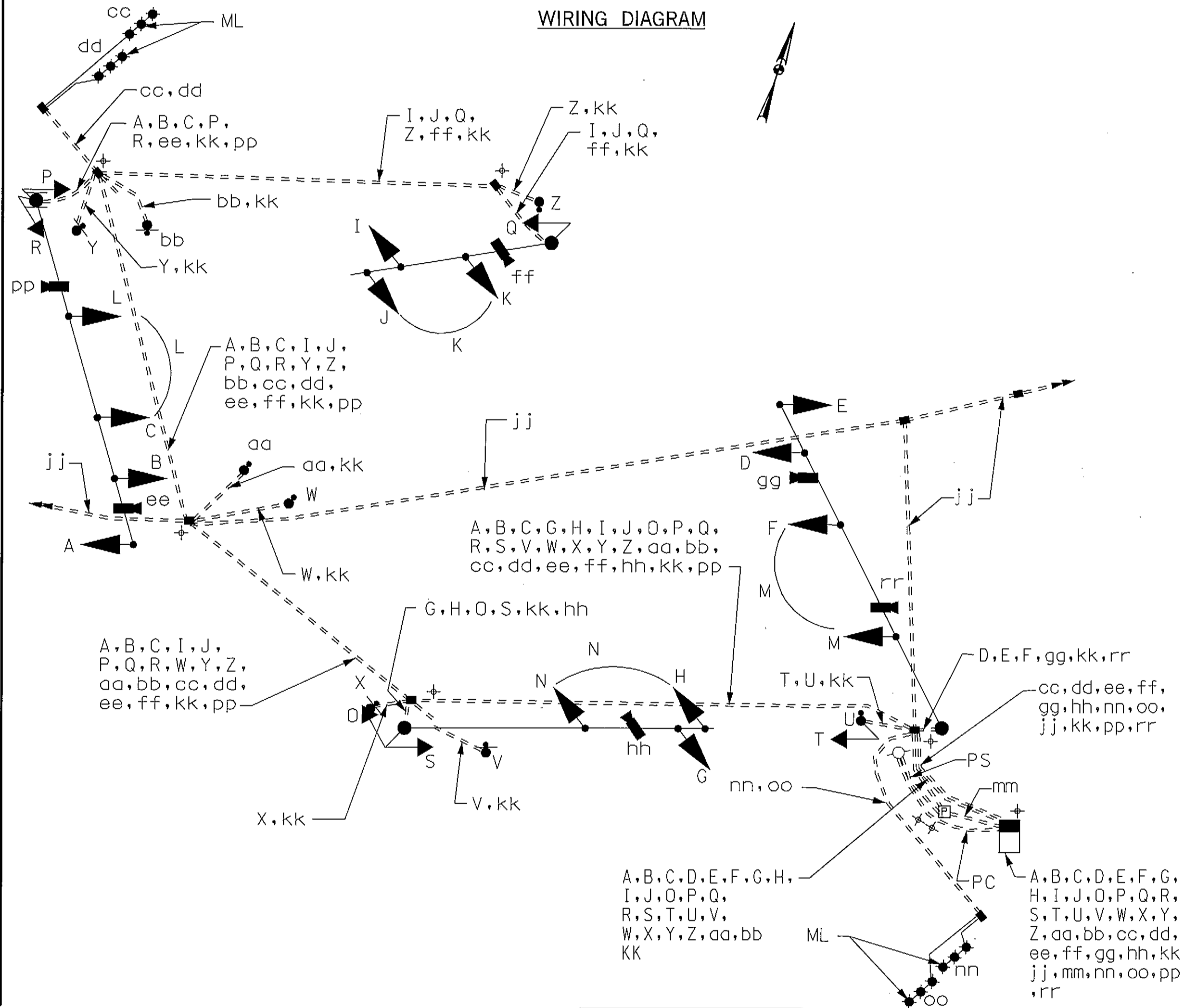
KEY

A,B,C,D,E, } 7 CONDUCTOR ELECTRICAL CABLE F,G,H,I,J } (NO. 14 A.W.G.)	ee,ff } gg,hh } pp,rr }	VIDEO DETECTION CABLE
K,L,M,N,O, } 5 CONDUCTOR ELECTRICAL CABLE P,Q,R,S,T } (NO. 14 A.W.G.)	kk }	1 CONDUCTOR (NO. 6 A.W.G.) STRANDED COPPER GROUND WIRE
U,V,W,X,Y, } 2 CONDUCTOR ELECTRICAL CABLE Z,aa,bb }	jj }	12 PAIR INTERCONNECT CABLE (REFER TO INTERCONNECT PLANS FOR DETAILS AND INSTALLATION.)
	mm }	3 WIRE 1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.) THHN/THWN

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	←R	←R	Y	Y	←R	←R	Y	Y	←R	←R	Y	Y	←R	←R	Y	Y	←R	←R	Y	Y
	←G	←G	G	G	←G	←G	G	G	←G	←G	G	G	←G	←G	G	G	←G	←G	G	G
PHASE 1 AND 5	←G-	←G-	R	R	←G-	←G-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6																				
PHASE 1 AND 6	←G-	←G-	G	G	←R-	←R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
1 AND 6 CHANGE	←Y-	←Y-	G	G	←R-	←R-	R	R	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 5	←R-	←R-	R	R	←G-	←G-	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
2 AND 5 CHANGE	←R-	←R-	R	R	←Y-	←Y-	G	G	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 2 AND 6	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	R	R	WK	WK	WK	WK	DW	DW
PED CLEARANCE	←R-	←R-	G	G	←R-	←R-	G	G	R	R	R	R	R	R	FLDW	FLDW	FLDW	FLDW	DW	DW
2 AND 6 CHANGE	←R-	←R-	Y	Y	←R-	←R-	Y	Y	R	R	R	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 3	←R-	←R-	R	R	←R-	←R-	R	R	←G-	←G-	G	R	R	R	DW	DW	DW	DW	DW	DW
3 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	Y	Y	Y	R	R	R	DW	DW	DW	DW	DW	DW
PHASE 4	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	←G-	←G-	G	DW	DW	DW	DW	DW	DW
4 CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
PHASE 4 ALT	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	←G-	←G-	G	DW	DW	DW	DW	WK	WK
PED CLEARANCE	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	←G-	←G-	G	DW	DW	DW	DW	FLDW	FLDW
4 ALT CHANGE	←R-	←R-	R	R	←R-	←R-	R	R	R	R	R	Y	Y	Y	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	←FL/R	←FL/R	FL/Y	FL/Y	←FL/R	←FL/R	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK

WIRING DIAGRAM



SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

US 40 (BALTIMORE NATIONAL PIKE) AND

JOHNNYCAKE ROAD/ACADEMY ROAD

GATONSVILLE, MARYLAND

GENERAL INFORMATION PLAN

SCALE NONE ADVERTISED DATE 92011 CONTRACT NO. BA8775177

DESIGNED BY K.J.S. COUNTY BALTIMORE

DRAWN BY H.W.G. LOG/MILE 03004003-22

CHECKED BY T.A.R. TMS NO. K132

F.A.P. NO. TOD NO.

TS NO. 887B DRAWING SP-2 OF SP-2 SHEET NO. 27 OF 36